Technical Physics Letters 2012 vol.38 N7, pages 645-648

Nickel nanoparticles and nanowires obtained by scanning probe lithography using point indentation technique

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Abstract

A lithographic method of obtaining metal nanowires and nanoparticles on solid substrates is proposed, which employs a polymer mask with windows for the metal deposition formed by indentation in an atomic force microscope. Using this method, Ni nanowires with a minimum width of 60 nm, thicknesses within 6-20 nm, and lengths up to 20 μm and Ni nanoparticles with a preset ordered arrangement have been obtained on a SiO 2 surface. The domain structure in obtained nanoobjects has been studied by the magnetic force microscopy technique. © 2012 Pleiades Publishing, Ltd.

http://dx.doi.org/10.1134/S1063785012070152